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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,522	05/11/2004	Krishna Mohan ITIKARLAPALLI	ORCL-003/OID-2003-253-01	3521

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EXAMINER

SANDERS, AARON J

ART UNIT PAPER NUMBER

2191

DATE MAILED: 08/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/709,522

Applicant(s)

ITIKARLAPALLI ET AL.

Examiner

Aaron J. Sanders

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 11 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Specification*

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The disclosure is objected to because the font size is too large for comfortable reading. While the MPEP does not specify a maximum font size, it suggests that nonscript type fonts (e.g. Arial, Times New Roman, or Courier) have a font size of 12. See MPEP 608.01. Appropriate correction is required.

The disclosure is objected to for the consistent misspelling of 'roll-back'. The proper spelling is 'rollback'. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Raz, U.S. Pat. 5,701,480.

As per claims 1-21, Raz teaches:

1. A method of implementing an atomic transaction using a program logic, said method comprising:

requesting in said program logic a transaction identifier for said atomic transaction (See e.g. Brief Summary par. 32, 'Local transactions are committed upon an explicit request from the local concurrency control mechanism');

generating said transaction identifier in a transaction manager in response to said requesting (See e.g. Brief Summary par. 7, 'To identify the transaction being performed, the transaction is typically assigned a unique "transaction identification number"');

specifying in said program logic a plurality of combinations for execution in a sequential order, wherein each of said plurality of combinations contains said transaction identifier, a task procedure, and a roll-back procedure, wherein said task procedure implements a part of said atomic transaction and said roll-back procedure is designed to roll-back said task procedure (See e.g. Brief Summary par. 34, 'there may exist in the database a multiplicity of uncommitted versions, each associated with a possible commitment order for transactions following the last committed transaction', Detailed Description par. 40, 'The transaction list includes a linked list

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of transaction identification numbers 106' and Brief Summary par. 6, 'The recovery unit consists of program statements between a "START" statement and a "COMMIT" statement. All of the statements in the "recovery unit" must be completed before the memory records modified by the statements in the recovery unit are made available for subsequent processing... The statements in the "recovery unit" specify operations in a single "transaction"');

executing said task procedures in said sequential order (See e.g. Drawing Description, 'FIGS. 24A and 24B together comprise a flowchart of a procedure for fetching a desired record using the pointers of the data structure of FIG. 4' and Figs. 24A and 24B);

keeping track of said roll-back procedures in said transaction manager (See e.g. Brief Summary par. 6, 'The recovery unit consists of program statements between a "START" statement and a "COMMIT" statement'); and

executing said roll-back procedures in a reverse order of said sequential order if said atomic transaction is to be aborted, wherein said roll-back procedures are identified according to said keeping (See e.g. Brief Summary par. 21, 'the updated records are replaced with "before images" that are obtained from the "undo log" to undo the effects of the failed transactions').

2. The method of claim 1, wherein said transaction identifier is unique to each of the atomic transactions (See e.g. Brief Summary par. 7, 'To identify the transaction being performed, the transaction is typically assigned a unique "transaction identification number"').

3. The method of claim 1, wherein said keeping comprises storing data representing said roll-back procedures in a stack (See e.g. Detailed Description par. 35, 'the transaction scheduler responds to an interrupt by removing the context of the interrupted transaction from the processor stack of the digital computer... The context includes the value of the program counter which points to the interrupted memory location in the transaction program').

4. The method of claim 3, wherein said stack is stored in a memory (See e.g. Brief Summary par. 6, 'the operating system typically provides an established set of memory management procedures that can be invoked or called from an application program to define a "recovery unit"', where the 'stack' in the reference is part of the 'recovery unit').

5. The method of claim 1, further comprising examining a status returned by execution of one of said task procedures and performing said aborting if said status indicates an error (See e.g. Detailed Description pars. 40 and 122, 'a flag R indicating whether preparation of the transaction has been completed and the transaction is ready to be committed' and 'the entire before-image log file for the failed process is scanned backwards to recover and un-do the effects of a failed transaction for the failed process' respectively).

6. The method of claim 1, wherein said aborting is performed asynchronously (See e.g. Detailed Description par. 345, 'Later, asynchronously, if T is committed by the AC protocol, abort all the transactions in the set  $ABORT_{ECO}(T)$ ' where T is a transaction, see Detailed Description par. 272).

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7. A computer readable medium carrying one or more sequences of instructions representing a program logic for execution on a system, said program logic implementing an atomic transaction, wherein execution of said one or more sequences of instructions by one or more processors contained in said system causes said one or more processors to perform the actions of:

- requesting an identifier for said atomic transaction (See e.g. Brief Summary par. 32, 'Local transactions are committed upon an explicit request from the local concurrency control mechanism');

- setting a variable to equal said identifier (See e.g. Brief Summary par. 7, 'To identify the transaction being performed, the transaction is typically assigned a unique "transaction identification number"' and Fig. 7);

- specifying a plurality of combinations for execution, wherein each of said plurality of combinations contains said transaction identifier, a task procedure, and a roll-back procedure, wherein said task procedure implements a part of said atomic transaction and said roll-back procedure is designed to roll-back said task procedure (See e.g. Brief Summary par. 34, 'there may exist in the database a multiplicity of uncommitted versions, each associated with a possible commitment order for transactions following the last committed transaction', Detailed Description par. 40, 'The transaction list includes a linked list of transaction identification numbers 106' and Brief Summary par. 6, 'The recovery unit consists of program statements between a "START" statement and a "COMMIT" statement. All of the statements in the "recovery unit" must be completed before the memory records modified by the statements in the recovery unit are made available for subsequent processing... The statements in the "recovery unit" specify operations in a single "transaction"'); and

- aborting said atomic transaction by specifying said identifier associated with an abort procedure to cause said roll-back procedures to be executed (See e.g. Brief Summary par. 21, 'the updated records are replaced with "before images" that are obtained from the "undo log" to undo the effects of the failed transactions' and Figs. 12A and 12B).

8. The computer readable medium of claim 7, wherein said specifying comprises including each of said plurality of combinations in a single procedure call (See e.g. Brief Summary par. 7, 'it is desirable to distribute the operations in a transaction among multiple processors or processes in a computing system' where, in order to distribute the processes, a single function call is made in the 'computing system' passing the 'transaction' to be processed).

9. The computer readable medium of claim 7, further comprising examining a status returned by execution of one of said task procedures and performing said aborting if said status indicates an error (See e.g. Detailed Description pars. 40 and 122, 'a flag R indicating whether preparation of the transaction has been completed and the transaction is ready to be committed' and 'the entire before-image log file for the failed process is scanned backwards to recover and un-do the effects of a failed transaction for the failed process' respectively).

10. A computer readable medium carrying one or more sequences of instructions for supporting implementation of an atomic transaction in a system, wherein execution of said one

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or more sequences of instructions by one or more processors contained in said system causes said one or more processors to perform the actions of:

generating an identifier for said atomic transaction (See e.g. Brief Summary par. 7, 'To identify the transaction being performed, the transaction is typically assigned a unique "transaction identification number"');

receiving a plurality of combinations for execution, wherein each of said plurality of combinations contains said transaction identifier, a task procedure, and a roll-back procedure, wherein said task procedure implements a part of said atomic transaction and said roll-back procedure is designed to roll-back said task procedure (See e.g. Brief Summary par. 34, 'there may exist in the database a multiplicity of uncommitted versions, each associated with a possible commitment order for transactions following the last committed transaction', Detailed Description par. 40, 'The transaction list includes a linked list of transaction identification numbers 106' and Brief Summary par. 6, 'The recovery unit consists of program statements between a "START" statement and a "COMMIT" statement. All of the statements in the "recovery unit" must be completed before the memory records modified by the statements in the recovery unit are made available for subsequent processing... The statements in the "recovery unit" specify operations in a single "transaction"');

executing said task procedures (See e.g. Drawing Description, 'FIGS. 24A and 24B together comprise a flowchart of a procedure for fetching a desired record using the pointers of the data structure of FIG. 4' and Figs. 24A and 24B); and

executing said roll-back procedures in response to receiving an abort request (See e.g. Brief Summary par. 21, 'the updated records are replaced with "before images" that are obtained from the "undo log" to undo the effects of the failed transactions').

11. The computer readable medium of claim 10, wherein said task procedures are executed in an execution order and corresponding roll-back procedures are executed in a reverse order of said execution order (See e.g. Brief Summary par. 6, 'The recovery unit consists of program statements between a "START" statement and a "COMMIT" statement. All of the statements in the "recovery unit" must be completed before the memory records modified by the statements in the recovery unit are made available for subsequent processing... The statements in the "recovery unit" specify operations in a single "transaction"').

12. The computer readable medium of claim 11, further comprising storing data indicating that said roll-back procedures are to be executed in said reverse order to abort said atomic transaction (See e.g. Brief Summary par. 6, 'The recovery unit consists of program statements between a "START" statement and a "COMMIT" statement. All of the statements in the "recovery unit" must be completed before the memory records modified by the statements in the recovery unit are made available for subsequent processing... The statements in the "recovery unit" specify operations in a single "transaction"').

13. The computer readable medium of claim 12, wherein said identifier is generated to be unique for each atomic transaction (See e.g. Brief Summary par. 7, 'To identify the transaction being performed, the transaction is typically assigned a unique "transaction identification number"').

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14. The computer readable medium of claim 12, wherein said data is represented in the form of a stack (See e.g. Detailed Description par. 35, 'the transaction scheduler responds to an interrupt by removing the context of the interrupted transaction from the processor stack of the digital computer... The context includes the value of the program counter which points to the interrupted memory location in the transaction program').

15. The computer readable medium of claim 14, wherein said stack is stored in a memory (See e.g. Brief Summary par. 6, 'the operating system typically provides an established set of memory management procedures that can be invoked or called from an application program to define a "recovery unit"', where the 'stack' in the reference is part of the 'recovery unit').

16. A computer system comprising:  
a memory storing a plurality of instructions (See e.g. Brief Summary par. 6, 'the operating system typically provides an established set of memory management procedures that can be invoked or called from an application program to define a "recovery unit." The recovery unit consists of program statements between a "START" statement and a "COMMIT" statement'); and

a processing unit coupled to said memory and executing said plurality of instructions to support implementation of an atomic transaction in a programming environment, said processing unit being operable to (See e.g. Fig. 1, 'Central Processing Unit 21' and 'Volatile Random Access Memory 22'):

request in a program logic a transaction identifier for said atomic transaction (See e.g. Brief Summary par. 32, 'Local transactions are committed upon an explicit request from the local concurrency control mechanism');

generate said transaction identifier in a transaction manager in response to said requesting (See e.g. Brief Summary par. 7, 'To identify the transaction being performed, the transaction is typically assigned a unique "transaction identification number"');

specify in said program logic a plurality of combinations for execution in a sequential order, wherein each of said plurality of combinations contains said transaction identifier, a task procedure, and a roll-back procedure, wherein said task procedure implements a part of said atomic transaction and said roll-back procedure is designed to roll-back said task procedure (See e.g. Brief Summary par. 34, 'there may exist in the database a multiplicity of uncommitted versions, each associated with a possible commitment order for transactions following the last committed transaction', Detailed Description par. 40, 'The transaction list includes a linked list of transaction identification numbers 106' and Brief Summary par. 6, 'The recovery unit consists of program statements between a "START" statement and a "COMMIT" statement. All of the statements in the "recovery unit" must be completed before the memory records modified by the statements in the recovery unit are made available for subsequent processing... The statements in the "recovery unit" specify operations in a single "transaction"');

execute said task procedures in said sequential order (See e.g. Drawing Description, 'FIGS. 24A and 24B together comprise a flowchart of a procedure for fetching a desired record using the pointers of the data structure of FIG. 4' and Figs. 24A and 24B);

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keep track of said roll-back procedures in said transaction manager (See e.g. Brief Summary par. 6, 'The recovery unit consists of program statements between a "START" statement and a "COMMIT" statement'); and

execute said roll-back procedures in a reverse order of said sequential order if said atomic transaction is to be aborted, wherein said roll-back procedures are identified according to said keeping (See e.g. Brief Summary par. 21, 'the updated records are replaced with "before images" that are obtained from the "undo log" to undo the effects of the failed transactions').

17. The computer system of claim 16, wherein said transaction identifier is unique to each of the atomic transactions (See e.g. Brief Summary par. 7, 'To identify the transaction being performed, the transaction is typically assigned a unique "transaction identification number"').

18. The computer system of claim 16, wherein said processing unit is operable to store data representing said roll-back procedures in a stack to perform said keep (See e.g. Detailed Description par. 35, 'the transaction scheduler responds to an interrupt by removing the context of the interrupted transaction from the processor stack of the digital computer... The context includes the value of the program counter which points to the interrupted memory location in the transaction program').

19. The computer system of claim 18, wherein said stack is stored in a memory (See e.g. Brief Summary par. 6, 'the operating system typically provides an established set of memory management procedures that can be invoked or called from an application program to define a "recovery unit"', where the 'stack' in the reference is part of the 'recovery unit').

20. The computer system of claim 16, wherein said processing unit is further operable to examine a status returned by execution of one of said task procedures and to perform said aborting if said status indicates an error (See e.g. Detailed Description pars. 40 and 122, 'a flag R indicating whether preparation of the transaction has been completed and the transaction is ready to be committed' and 'the entire before-image log file for the failed process is scanned backwards to recover and un-do the effects of a failed transaction for the failed process' respectively).

21. The computer system of claim 16, wherein said processing unit is operable to execute said roll-back procedures asynchronously (See e.g. Detailed Description par. 345, 'Later, asynchronously, if T is committed by the AC protocol, abort all the transactions in the set  $ABORT_{ECO}(T)$ ' where T is a transaction, see Detailed Description par. 272).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron J. Sanders whose telephone number is 571-270-1016. The examiner can normally be reached on M-Th 7:30a-5:00p.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bruce can be reached on 571-272-2487. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AJS



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